Remarks/Arguments:

Claims 1-3 are pending. Claims 4-27 have been withdrawn from prosecution in the present application. Claim 1 has been amended to correct a clerical error in the claim, which does not affect the patentability of this claim.

Claims 1-3 have been rejected under 35 U.S.C. § 102(b) as anticipated by Cordingley et al. (US Patent Application Publication No. 2002/0141473 A1). Additionally, it appears that the Examiner has intended to reject claims 1-3 under 35 U.S.C. § 103(a) as being unpatentable over Cordingley et al. in view of Ehrmann et al. (US Patent Application Publication No. 2002/0170898 A1). These rejections are traversed for the reasons set forth below.

Cordingley et al. disclose a method to increase the size of the energy window in which a link on a semiconductor device may be successfully cut. This method involves varying the polarization of a laser beam used to cut links on a semiconductor device. The method of Cordingley et al. is a thermal process (see, for example, paragraphs **[0058]** and **[0062]** that describe cracking and stress caused by heating of the links) that uses long laser pulses (10ns is quoted as an exemplary pulse width in paragraph **[0052]**) to blow these links. Cordingley et al. teach that it is preferable to use linearly polarized laser beams in which the polarization vector is across along the link (Figures 13 and 14 of Cordingley et al.).

Ehrmann et al. disclose the use of beam spots having an elliptical irradiation pattern (i.e. a non-circular beam intensity profile), but do not disclose the use of beam polarization in laser machining.

Neither Cordingley et al. nor Ehrmann et al., singly or in combination, disclose or suggest a feature recited in claim 1 of the present application, namely:

> ...d) adjusting an ellipticity of the polarization of the pulse of laser light such that the pulse of laser light has contours of constant machining capacity on the surface of the microstructure workpiece, the constant machining capacity contours having a substantially similar shape to the predetermined elliptical shape; and
>
> e) controlling fluence of the focused pulse of laser light in the beam spot such that the area of the surface of the workpiece laser machined by the pulse of laser light is substantially the predetermined elliptical shape. (Emphasis added.)

This feature of the present invention is illustrated in Figure 3.

The present invention, as recited in claim 1, controls both the polarization properties and the fluence of pulses of laser light so that each pulse of laser light machines an area of the workpiece surface that substantially matches a predetermined shape, without varying the intensity profile of the beam spot.

Cordingley et al. disclose a method that involves varying the polarization of a laser beam used to cut links on a semiconductor device. However, Cordingley et al. do not use the polarization of the beam to change the shape of the area machined by a laser pulse as recited in claim 1. Instead, Cordingley et al. vary the polarization of their laser beam to increase the size of the energy window in which a link may be successfully cut. Additionally, because the method of Cordingley et al. is a thermal process that uses long pulses, this method does not produce holes that have a well defined shape based only on the laser beam. Instead, Cordingley et al. disclose that efficient link removal requires cracking of coating layers at the upper corners of the links. (Paragraphs **[0052]** and **[0062]**.) Thus, the hole shape produced by the method of Cordingley et al. is primarily dependent on the shape the link, not the properties of the beam used to cut the link.

On the other hand, in the present invention, as recited in claim 1, the shape of the feature machined by each laser pulse is controlled by adjusting the polarization properties and the fluence of pulses of laser light.

Ehrmann et al. do not disclose the use of polarization in laser machining and, thus cannot overcome the deficiencies of Cordingley et al. with regard to claim 1 of the present application.

Therefore, for the reasons described above, claim 1 is not be subject to rejection under 35 U.S.C. § 102(b) as anticipated by Cordingley et al., nor is claim 1 subject to rejection under 35 U.S.C. § 103(a) as unpatentable over Cordingley et al. in view of Ehrmann et al. As claims 2 and 3 depend from claim 1, these claims are not subject to this rejection as well.

Claims 1-3 have also been rejected under 35 U.S.C. § 102(a) as anticipated by Fumitsugu et al. (EP 1338371 A). This rejection is traversed for the reasons set forth below.

Fumitsugu et al. disclose a method for cutting materials using lasers. This method involves forming a line of damaged material in the material by focusing the laser beam within the material. The material may then be broken along this line of damage. (Paragraph **[0006]**.) This line of damage includes surface cracking formed by the shock from the pulses, which Fumitsugu et al. disclose to occur preferentially in the direction of polarization of linearly

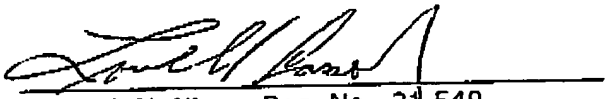
polarized pulses (or the major polarization axis of elliptically polarized pulses). (Paragraph **[0215]**.) Thus, Fumitsugu et al. do not use the polarization of the beam to control the shape of an elliptical area of the surface machined by a laser pulse as recited in claim 1. Also, this surface cracking indicates that Fumitsugu et al. necessarily use a thermal process, even though they cite that a pulse length less than 1ns may be used in their method in paragraph **[0032]**.

Therefore, for the reasons described above, claim 1 is not be subject to rejection under 35 U.S.C. § 102(b) as anticipated by Fumitsugu et al. As claims 2 and 3 depend from claim 1, these claims are not subject to this rejection as well.

Conclusion

In view of the foregoing amendments and remarks, Applicants request that the Examiner reconsider and withdraw the rejection of claims 1-3.

Respectfully submitted,



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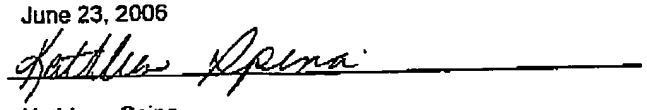

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